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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,035	12/28/2001	Young Ho Bae	2658-0280P	3483
2292	7590	08/11/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			KACKAR, RAM N	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,035

Applicant(s)

BAE, YOUNG HO

Examiner

Ram N. Kackar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawing corrections received on 10/19/2004, 5/11/2005 and 5/3/2006 are not acceptable. The drawing changes do not remove the deficiencies of the original drawings dated 12/28/2001 submitted with the application.

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

The drawing deficiencies at minimum include drawings for load and unload of the substrate indicating clearly, the elements claimed, so as to enable one to locate them on the drawings. These should include elements whose distances and sizes are claimed.

It is further required that no new matter is added.

The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Specification***

2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms that are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first

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paragraph. It is further required that no new matter is added. Piece meal changes to the specification submitted on 3/1/2004, 10/19/2004, 5/11/2005 and 5/3/2006 have not made it more clear concise and exact as per the requirement.

### ***Claim Objections***

3. Regarding claim 12 applicants attention is drawn to the language of the claim

“ the sliding portion of the susceptor comprises: a first planar portion; a second planar portion above the first planar portion, wherein the glass substrate slides on the second planar portion” appears to indicate that the sliding portion has two planer surfaces one above the other.

Applicant is requested to correct the claim according to the explanation in the remarks.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8, 10-12 and 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In this instance sliding mechanism for claimed load and unload of the substrate is not described in drawings and specification. Included in missing items is the description and drawing

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to indicate complete sliding portion, its distance from an edge of the groove and position and orientation of the robot arm with and without substrate during unload, load and sliding.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this claim the robot arm is recited to be inclined 85 degrees. However, the surface with respect to which the angle is measured is not disclosed.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-3, 6, 11, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by DuBois et al (US 5855687).**

DuBois et al disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48).

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As discussed above robot arm sliding on the susceptor would be an intended use.

Regarding claims 2 and 3 the area for sliding is more than 10mm from the groove (Fig 3-44) to allow the substrate to slide.

Regarding claim 12 sliding portion is a part of susceptor on whose top surface substrate sits. This part has several planer surface portions like at the bottom of the susceptor or on the side. The substrate support planer surface is obviously at a greater height.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**10. Claims 1-8, 10-12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of Tepman et al (US 5589224) or alternatively in view of DuBois et al (US 5855687).**

Applicants admitted prior art (AAPA) as disclosed in Figs 1 to Fig 4 A, B, C and D and the specification paragraphs 2-23 discloses all limitations of these claims except the groove to collect material disposed on the susceptor.

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD, sputtering, ion implanters etc (Col 1 lines 10-19), lift pins (Fig 1-30), robot arm (Fig 4 and Col 2 lines 13-16) and groove around susceptor to collect deposition so that build up on the surface of the susceptor may not cause problem by sticking to the substrate (Fig 3-38 and Col 4 lines 54-63).

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Similarly DuBois et al disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have grooves on the susceptor in order to avoid problems of substrate sticking.

**11. Claim 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois et al (US 5855687) in view of Rempei Nakata (US 5119761).**

DuBois et al as discussed above do not disclose the susceptor to be made of Quartz.

Quartz susceptors are common for thermal processing for its thermal insulation properties.

Rempei Nakata discloses a quartz susceptor (Fig 12-106 and Col 1 lines 44-49).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a susceptor of quartz for its excellent thermal properties of insulation.

**12. Claims 5 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois et al (US 5855687).**

DuBois et al disclose groove but do not disclose different shapes of the bottom of the groove. Since the purpose of the groove is to collect film forming material and applicant has not disclosed any special advantage of a particular shape at the bottom they are considered art recognized equivalent and therefore obvious.

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The courts have held *regarding change in shape*: It was held in *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that the shape was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular shape was significant. (Also see MPEP 2144.04(d)).

Similarly, *regarding change in size/proportion*: It was held in *re Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984) that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

**13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over DuBois et al (US 5855687) in view of Robertson et al (US 5366585).**

DuBois et al as discussed above do not disclose the susceptor to be of rectangular shape  
Robertson et al disclose a rectangular susceptor for a rectangular substrate (Fig 2B).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a rectangular susceptor to process a rectangular substrate.

#### ***Response to Amendment***

Applicant's arguments filed 5/3/2006 have been fully considered but they are not persuasive.



Applicant's amendment to specification is not acceptable as it brings new matter which is in conflict with the original specification.

Replacement drawings are not acceptable as they still do not address the deficiencies pointed out before.

Applicant's argument that the drawings and specification are sufficient is not persuasive.

Regarding Applicants argument that Tepman does not disclose heating it is noted that the apparatus disclosed by Tepman is dedicated to chemical vapor deposition, physical vapor deposition, sputtering and ion implantation. Which means that inherently the substrate gets heated. Nevertheless, 35 U.S.C. 102(b) rejection relying upon Tepman has been removed.

Regarding "sliding" applicants characterization of it being inherent is entirely misplaced. Sliding is not a structural feature but only a functional limitation which has no patentable weight.

Regarding claim 11 and 12, claim 11 recites purely a functional requirement having no patentable weight. Claim 12 is addressed above. Regarding claims 2 and 3 since there is a large area where sliding could occur according to use, it is possible to have any distance. This therefore is dependent upon an intended use and is therefore not patentable.

**Applicants argue that conventional art is not a prior art without giving any reason for asserting this.**

The original specification devotes paragraphs 2-23 in the sections of DESCRIPTION OF THE RELATED ART part of BACKGROUND OF THE INVENTION and Fig. 1 to 4D in drawings to describe the state of the existing art and the problems encountered in it.

In paragraph 1 directed to FIELD OF THE INVENTION and in paragraph 24 directed to SUMMARY OF THE INVENTION the object of the invention is disclosed to be to correct the

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problems of the conventional art by providing an apparatus for minimizing the breakage of the glass caused by the slide miss of the glass.

It is claimed that problems in the conventional (prior) art relate to improper sliding causing breakage. This clearly points to a sliding function existing in the prior art.

Also disclosed are the function of film forming material and substrate getting caught by it. Some of this description has gaps and is not clear, concise and exact according to the requirement.

Further, original drawings do not show any load or unload sequence and show the substrate as sitting horizontally on the susceptor (Fig 5-10C). Piece meal amendments to drawing to show substrate at an angle appear to be a new matter.

Therefore, it is clear that the only structural difference relates to grooves.

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar  
Primary Examiner AU 1763